STAFF REPORT
Application #WPL-11051-20
6 Manitou Court
Filed August 13, 2020
Prepared August 19, 2020 and last revised to September 3, 2020
Public Hearing: September 9, 2020

Application Request: The Applicant is requesting to elevate and renovate a single family residence along the river and construct an enclosed breezeway connecting to a new addition with an in-ground pool up-gradient and outside the WPLO. The driveway will remain in the same general location. The second on-site single-family residence will be demolished. The project includes a new septic system, filling, grading, terraced walls and drainage improvements. The existing deck will be rebuilt. The seawall shall be repaired and will remain in the same location and height. The dock will remain. A portion of the work is within the WPLO of the Saugatuck River.

Plans reviewed:

1. "Proposed Site Improvements for a Single Family Addition and Renovation – **Demolition Plan**, 6 Manitou Court LLC., 6 Manitou Court, Westport, CT", **Sheet C-0**, Scale: 1"=20', Dated **May 12, 2020** and last revised to **August 11, 2020**, prepared by Landtech
2. "Proposed Site Improvements for a Single Family Addition and Renovation – **Layout Plan**, 6 Manitou Court LLC., 6 Manitou Court, Westport, CT", **Sheet C-1**, Scale: 1"=20', Dated **May 12, 2020** and last revised to **August 11, 2020**, prepared by Landtech
3. "Proposed Site Improvements for a Single Family Addition and Renovation – **Utility & Grading Plan**, 6 Manitou Court LLC., 6 Manitou Court, Westport, CT" **Sheet C-2**, Scale: 1"=20', Dated **May 12, 2020** and last revised to **August 28, 2020**, prepared by Landtech
4. "Proposed Site Improvements for a Single Family Addition and Renovation – **Notes & Details**, 6 Manitou Court LLC., 6 Manitou Court, Westport, CT" **Sheet C-3**, Scale: 1"=20', Dated **May 12, 2020** and last revised to **August 11, 2020**, prepared by Landtech
5. "Proposed Site Improvements for a Single Family Addition and Renovation – **Notes & Details**, 6 Manitou Court LLC., 6 Manitou Court, Westport, CT" **Sheet C-4**, Scale: 1"=20', Dated **May 12, 2020** and last revised to **August 28, 2020**, prepared by Landtech
6. "Proposed Site Improvements for a Single Family Addition and Renovation – **Illustrative Plan Showing Exempted Grading**, 6 Manitou Court LLC., 6 Manitou Court, Westport, CT" **Sheet C-5**, Scale: 1"=20', Dated **May 12, 2020** and last revised to **August 11, 2020**, prepared by Landtech
7. "**Landscape Plan**, 6 Manitou Court, Westport, CT" Scale: 1/16"=1'0", Dated May 14, 2020 and last revised to July 22, 2020, prepared by Wesley Stout Associates, (Sheets: **LP-1.0, LP-1.1, LP-1.2**)

8. "**Existing Conditions** Map of Property Prepared for 6 Manitou Court, LLC., 6 Manitou Court, Westport, CT", Scale: 1"=20', Dated March 16, 2020 and last revised to July 23, 2020 , prepared by Dennis A. Deilus Land Surveyors
9. "**Stormwater Management Report** for 6 Manitou Court Westport, CT", Dated May 12, 2020 last revised to **August 28, 2020**, prepared by Landtech
10. **Building Plans** entitled: "McInerney Residence 6 Manitou Court Westport, CT", Scale ¼"=1'0", Dated **May 12, 2020** and last revised to **July 21, 2020,** Sheets C-1.0 to A-3.0 (17 pgs), prepared by Robert A. Cardello Architecture + Design
11. Connecticut Department of Energy & Environmental Protection, **Certificate of Permission,** 6 Manitou Court, 202005391-COP, Dated July 15, 2020

Property Description:

Total lot area is 56,495 sq. ft. (1.297 ac)
Location of 25-year flood boundary: 9 ft. contour interval. The lower westerly portion of this parcel is below elevation 9.0'. The WPLO is established 15' landward from the 25-year flood boundary of the Saugatuck River.
Property is partially situated in Flood Zones VE (el. 14) as shown on F.I.R.M. Panel 09001C0551G Map revised to July 8, 2013.
Existing Boathouse/Residence- **basement floor elevation 6.9', first floor elevation 14.6'**
Proposed Boathouse/Residence- first floor elevation 21.0', open construction below built to VE flood standard
Existing Site Coverage: 21.9% (10,105 sq. ft.)
Proposed Site Coverage: 21.0% (10,690 sq. ft.), *slope reduction included in calculation*
Westport Weston Health District approval: June 9, 2020
No inland wetlands onsite

Aquifer: Property underlain by Sherwood Island Aquifer, which is a coarse-grained stratified drift aquifer. The property **is NOT** within the Town's wellfield protection zone

Coastal Area Management: The project is within the Coastal Area Management Zone. The coastal resources found onsite include:

1. Coastal Waters and Estuarine Embayments
   The site is located on the eastern bank of the Saugatuck River within the tidal range of the river about 5000 feet upstream of the mouth of the river into Long Island Sound. Coastal waters are those which contain a salinity of at least five hundred parts per million under low flow stream conditions.

2. Modified Bluffs & Escarpments means bluffs or escarpments which have been temporarily stabilized by erosion control structures.
   This site has been modified from a natural physiological state as evident by the existing seawall structure and stone slope that is located on the western portion of the property.

3. Tidal Wetlands means those areas which border or lie beneath tidal waters and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing vegetation species defined in CGS Section 22a-29(2). The vegetation on this site exists from the face of the seawall to the Saugatuck River.

4. Coastal Hazard Areas means those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas as defined and determined by the National Flood Insurance Act.

Vegetation Description
The portion of the property nearest the Saugatuck River (western portion) and seawall consists of manicured lawn on the northern end transitioning into a gravel patio then to an elevated deck towards the southern portion. Some areas are interspersed with the invasive Phragmites australis. Beyond this lower section, the site transitions to a steep slope consisting of a mix of mature trees and shrubs with ornamental species surrounding the existing residence. Some disturbed areas of the slope show signs of erosion due to stormwater runoff originating from the existing driveway. Further upslope, beyond the driveway and secondary residence/garage, the property is mostly wooded with ledge outcroppings visible and sign of groundwater seeps or drainage discharge to surface

Soils: The USDA classifies the soils onsite as Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E) which is a well-drained soils complex formed in loamy melt-out till. The USDA Web Soil Survey review of building site development for this soil show the soil's ratings for development as "very limited" for dwellings with basements (and without) and shallow excavations. The reason behind this designation is primarily attributed to the presence of slopes.

Previous Permits issued:
WPL/E-9599-13: Remove oil underground storage tank, Install 500 gallon underground propane tank
WPL/E-5265-95: Addition to residence

The Flood and Erosion Control Board **approved** the application at the **September 2, 2020 hearing**. Special conditions include:

- Submission of a temporary grading plan for construction access;
- Submission of certification from a professional engineer that the piers and breakaway walls for the boathouse/residence have been installed as designed; and,
- A site monitor be retained to provide weekly reports to the Town during the construction process.

The drainage proposal is acceptable to the Engineering Department.

The Application was approved by the Westport Weston Health District on June 9, 2020 for the indoor pool and the proposed septic design. The proposal consists of a 1500 gallon

septic tank, 1500 gallon pump chamber and 60' of Eljen Mantis system for the septic fields.

The Application received approvals by the Connecticut Department of Energy and Environment Protection (CT DEEP) on July 15, 2020 (**202005391-COP**) The permit allows for repairs to the seawall including adding weep holes in the ~90' southern section and a geotextile fabric along the rear of ~145' of northern section of seawall. Additionally it approves the lifting of the existing boathouse on new masonry piers, rebuilding the deck, and retain the existing dock/float.

Waterway Protection Line Ordinance

> Section 30-93 of the WPLO ordinance states the following: An applicant shall submit information to the Conservation Commission showing that such activity will not cause water pollution, erosion and or environmentally related hazards to life and property and will not have an adverse impact on the preservation of the natural resources and ecosystems of the waterway, including but not limited to, impact on ground and surface waters, aquifers, plant and aquatic life, nutrient exchange and supply, thermal energy flow, natural pollution filtration and decomposition, habitat diversity, viability and productivity and the natural rates and processes of erosion and sedimentation.

Discussion:
The Connecticut DEEP has issued a Certificate of Permission for both the seawall repairs, erosion stabilization, dock/pier replacement, and for the house lift and pier foundation work. The state has put limitations on work including timing activities to coincide with low tide, limiting site excavations, establishing a work sequence, and setting other site-specific limits for the work required. The applicant is also aware of Diamondback Terrapin in the general area and the work area will be checked each morning for their presence.

The seawall work includes repairs, inclusion of weep holes, removal of backfill and installing geotextile fabric and backfilling within the limits of the Coastal Jurisdiction Line (CJL), which occurs at the face of the seawall. This work lies within the limits of the Waterway Protection Line Ordinance (WPLO) and will be done from the property using land based equipment and hand tools. Excavated materials will be stored onsite and reused for backfilling. A turbidity curtain will be installed along the seawall at the start of site construction. Staff recommends the use of a site monitor to oversee excavation activities, monitor sediment and erosion controls, and report any issues related to the work directly in the WPL.

The applicant proposes to work within the areas of steep slope for the house construction/addition. The existing slope shows evidence of erosion and a deteriorated condition where extensive vegetation is not established. This is exacerbated by the amount of uncontrolled stormwater runoff from the existing driveway area. Staff feels that the condition of the slope will be further degraded if/when the remaining vegetation, primarily mature trees, are removed and not controlled. The soils will migrate downhill

through erosive actions and be deposited within the WPL. The applicant has provided sediment and erosion controls on the proposed site plan that consists of installing silt fence, construction entrance/anti-mudtracking pad and stockpile location. The silt fence locations consist of a double row of silt fence along the seawall at the toe of slope, an intermediary fence across the steep slope section, and another row of silt fence further upslope. Staff also notes the use of silt fence "wings" along proposed locations that run in parallel with the slope. Staff feels the fencing represents a minimal approach to controlling possible erosion onsite. Staff recommends additional measures should be included with this plan following recommendations found within the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. The applicant should consider adhering to a strict construction sequence, limiting areas of exposed soils at one time and keep vegetation in place as long as feasible. Staff feels that the Construction Sequence located on the "Addition & Renovation Notes & Details, Sheet C-4" of the proposed site plan set is not sufficient in addressing these concerns. Staff recommends a detailed sequence be provided to the Commission for review. Specific areas of slopes and vegetation should be left untouched until work is completed. For example, staff feels the area of the addition should not be cleared until the seawall and elevation of the boathouse are complete and stabilized. Any additional runoff of eroded sediments or uncontrolled stormwater will complicate these construction activities that are directly adjacent to the resource (the Saugatuck River) that we want to protect.

Additionally the applicant should include the use of other methods such as: silt fencing backed by hay bales, staked hay bales, coir logs, and/or erosion control blankets. This site's main attribute/characteristic of slope requires special attention during the construction phases. Again, staff recommends requiring a site monitor to provide weekly reports noting the condition of sediment and erosion controls and provide actionable items for the contractor to address to ensure the stability of the site.

The drainage from portions of the new addition, driveway, and pervious parking court are proposed to be collected within the parking court subbase reservoir. The reservoir will be 11" thick of stone with internal confinement berms and is partially wrapped on the edges with an impermeable poly-liner barrier. The reservoir will have a 4" thick layer of open-graded base stone above with an additional 5" thick of **porous asphalt** as the final top course. The reservoir has been sized to hold the volume of water equal to the first 1" of rainfall to manage the water quality volume. Excess water is piped, as an overflow, into a 6" pipe that drains downslope along the southerly property line. This over flow will be directed into a hydrodynamic vortex separator, the "Hydro International Downstream Defender". This unit will retain sediments and oils from stormwater runoff within the structure and allow stormwater to flow pass. This unit is considered a BMP (Best Management Practice), in addition to the driveway, to treat stormwater from the driveway and parking court. Staff discussed options with the design engineer and the Engineering Department to address water quality concerns regarding pollutants entering from the parking area. It was determined that routine methods of water quality treatment such as biofiltration swales and raingarden designs would not work within the site characteristics and installation comes with limitations of steep slopes and limited depth to bedrock. Staff feels that this engineered solution is appropriate for deployment in this area. Both

the pervious pavement and hydrodynamic separator's success are reliant on proper functionality. Staff recommends the owners should be made aware of the proper maintenance of the unit and asphalt and adhere to their upkeep. Staff recommends the applicant submit an operation and maintenance procedure for the drainage structure and pervious driveway prior to the issuance of a Conservation Certificate of Compliance (CCC).

Beyond the hydrodynamic separator, the stormwater, continues where it joins a 6" pipe originating from the existing catch basin along the driveway. It is subsequently joined by the footing drain of the addition. The terminus of this drain pipe is located at the base of the slope. The water discharges landward of the Coastal Jurisdiction Line (CJL) into and energy dissipator pad located beneath the proposed deck.

The other portions of the stormwater runoff from the proposed addition discharges into the 44' long gravel trench located downhill from the new addition and landscape terracing. This will function as a level spreader to disperse the runoff from the portion of the roof area identified in the drainage analysis. The stormwater from lower "boat house" portion of the site will not be managed and remain untreated as it is in its current condition.

The "Stormwater Management Report" provides information on management of stormwater onsite. They do not provide storage for the 25-yr storm event due to the site's location in relation to the Saugatuck River. The report shows that the three distinct drainage areas of the proposed construction onsite provide water quality volumes for treatment. The report states this is an improvement for water quality over the current condition.

Staff noted two areas of concern with the existing groundwater management onsite. One includes a side hill weep noted during onsite inspections of the property. This area is located near the existing shed along the driveway. It shows evidence of groundwater reaching the surface identifiable with the visible "orange" staining of the nearby areas. The air oxidizes the minerals in the water, primarily iron, forming ferrous hydroxides, which result in the staining. The other area of concern noting this condition, is along the rear of the existing garage structure where a pipe discharges near the existing fire pit. The same evidence of staining is an indicator of groundwater being collected and discharged to the surface. Staff notes the significant amount of proposed excavations and walls forming terraces onsite. The proposed walls will encounter the groundwater and therefore need footing drains to manage water. Staff would request any pipe acting as a footing drain (other than what is shown from the addition) to discharge uphill from the WPLO to allow for management of the groundwater. Staff recommends the applicant address the concerns by showing the location of drains and perforated pipe for each constructed wall and where the discharge will be managed.

The proposed subsurface sewage disposal system (septic system) has been reviewed and approved by the Westport Weston Health District on June 9, 2020. The system is an Eljen Mantis system designed for a five (5) bedroom residence. The system detail shows

the select fill required and associated grading and wall needed for construction. Of concern was the location of the septic and proposed walls surrounding the fill needed to raise the bottom of the septic above the **four feet** required to be above ledge. The wall is not to act as a conduit for the effluent.

The application also includes a "Landscape Plan" that proposes plants throughout the site. The selected plants appear to be native, non-invasive species. The collection of plants range from herbaceous, to shrub, to trees. A total of 20 trees are proposed, ranging in height from 8' to 30'. These trees, though considerably smaller than the mature trees currently onsite that are scheduled for clearing, are larger selections for landscaping installation projects and will require the use of heavy equipment to install. Staff recommends these installations are done with care to ensure that all sediment and erosion controls remain in place during planting. The recommended site monitor should also review plantings until the area is stable.

Alternatives for reduction of impacts

1. No construction alternative.
2. Continue the application to receive additional information.
3. Approve Application with the following conditions:

a) Conformance to the conditions of approval of the Flood & Erosion Control Board from the meeting of September 2, 2020.
b) Submit updated plans with revised sediment and erosion controls incorporating additional measures including a detailed construction sequence addressing work on the slope and removal of vegetation.
c) Conservation Department to be notified 48 hours prior to the start of construction for inspection of the erosion and sediment control measures.
d) A site monitor shall be retained for the duration of this project's construction and completion. Said monitor shall ensure compliance with the sediment and erosion control plans. Said monitor shall conduct weekly inspections and after storm events greater than 1 inch with written reports submitted to the Conservation Department on a weekly basis.
e) Submit an operation and maintenance procedure for hydrodynamic drainage structure and pervious driveway/parking area for review, approval and recording on the Westport Land Records prior to the issuance of a Conservation Certificate of Compliance.
f) Submit an updated plan depicting the location of drains and/or perforated pipe for each constructed wall and where the discharge will be managed prior to the issuance of a Zoning permit.